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(56) Documents Cited

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GB 1076254 A	GB 0929703 A	EP 0021960 A2

(58) Field of Search

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(54) Abstract Title

Flexible tie

(57) A flexible garden tie (10) has pad portions (11,12) joined by a strip portion (13). The pad (11) has studs (14) at its opposite ends and the pad (12) has openings (15) similarly distributed to accept the studs (14) as a friction fit. The tie (10) may be folded and a cane or the like engaged between the pads (11,12) or another tie may be secured end-to-end by inserting its studs (14) in the openings (15) of the first tie, or in an overlying relationship in which studs (14A) extending half way along one strip portion (13) engage openings (15A) extending half way along the other strip portion.

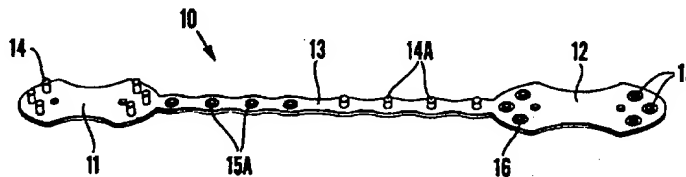


Fig. 1

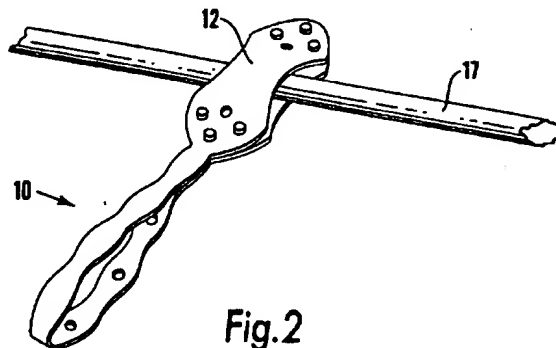


Fig. 2

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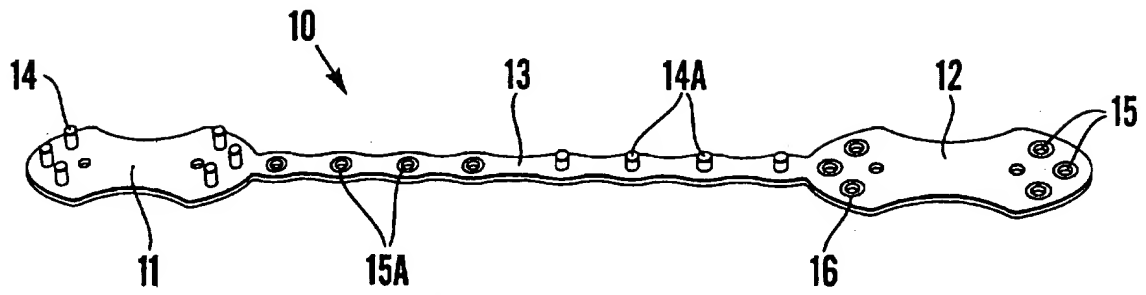


Fig. 1

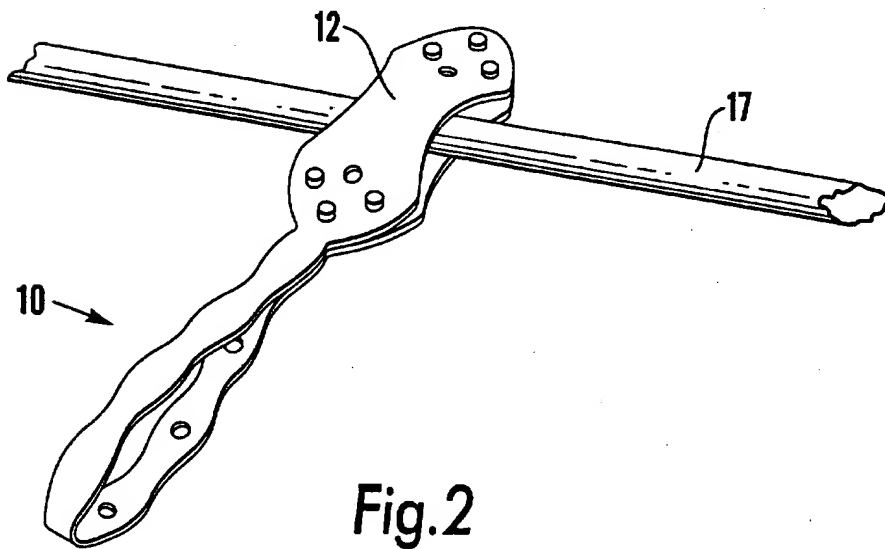


Fig. 2

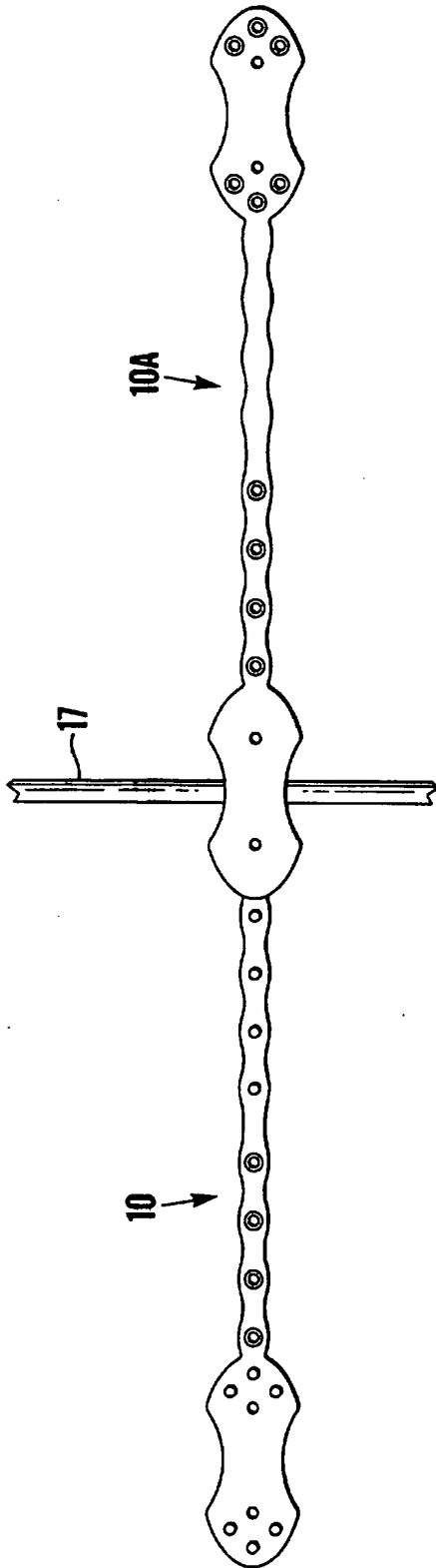


Fig. 3

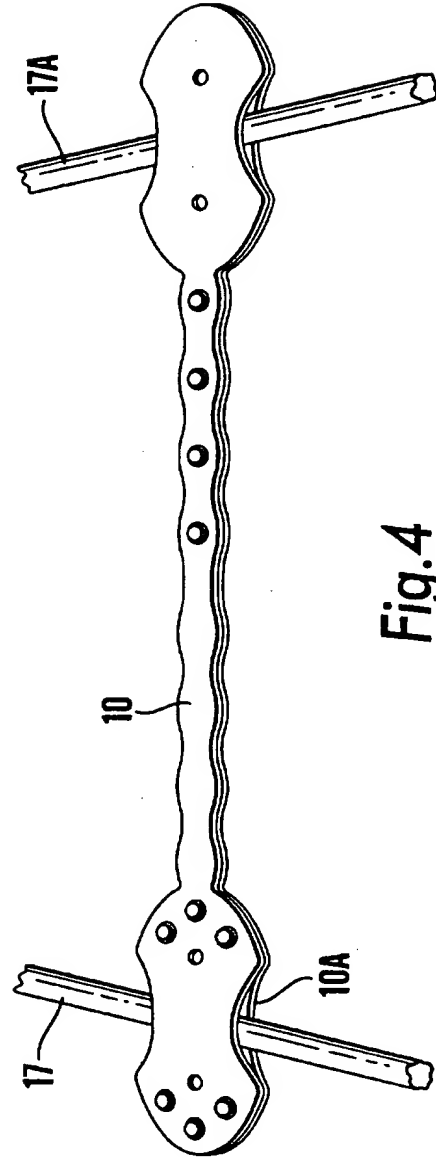


Fig. 4

"TIE"

This invention relates to a garden tie of improved versatility. By a "garden tie" is meant a flexible, elongated element primarily, but not exclusively, intended for supporting plants

In accordance with the present invention there is provided a tie of flat, flexible material comprising two pad portions of similar configuration joined by a relatively narrow strip portion, wherein the pad portions have respectively interengageable male and female formations which have a similar distribution on the pads such that the pads may be joined together by bending the strip portion or alternatively the male or the female formations may be engaged by the female or the male formations of another, similar tie so that the two ties are joined end-to-end.

The strip portion may additionally have male and female formations distributed along its length. Male formations may extend along one half of the length of the strip portion and a corresponding number of correspondingly positioned female formations may extend along the other half of the length of the strip portion such that when bent in the middle the two halves of the length of the strip portion may be secured together.

The male formations may be studs upstanding from one surface of the respective pad and the female formations may be openings in the other pad, each stud fitting a corresponding opening as a friction fit.

Each opening may be surrounded by an annular rebate.

The male and female formations are preferably grouped at opposite ends of the respective pad such that when one pad is brought to overlie the other the two pads may be joined at their opposite ends while allowing central areas of the pads to pass on opposite sides of an element between the pads.

Several male or female formations may be arranged in an arcuate pattern at each end of the respective pad.

A preferred embodiment of the invention will now be described by way on non-limitative example with reference to the accompanying Drawings, in which:

Figure 1 is a perspective view of a tie in accordance with the invention, Figure 2 shows the tie of Figure 1 engaging a cane between its pads, Figure 3 shows two ties similar to that of Figures 1 and 2 joined end-to-end, and Figure 4 shows two ties similar to those of Figure 3 but in an overlapping relationship.

The tie 10 of Figure 1 is an elongated, flat, flexible element of polypropylene, preferably of a non-degradable green colour for use in the garden. The tie has two similarly shaped pad portions 11 and 12 joined by a strip portion 13. The pad 11 has upstanding from one of its surfaces six studs 14 arranged in two arcuate patterns of three at opposite ends of the pad. The pad 12 is formed with six openings 15 which have a similar distribution on pad 12 as do the studs 14 on pad 11. At the surface of the tie from which the studs 14 project each opening 15 is surrounded by an annular rebate 16. The provision of these rebates thins the material of the tie around each opening 15 and makes for better frictional engagement with the studs. Each stud 14 is dimensioned to be a friction fit within each opening 15.

Studs 14A similar to the studs 14 are distributed along the length of the half of the strip portion 13 which is adjacent to the pad 12. Openings 15A are distributed along the length of the half of the strip portion 13 which is adjacent to the pad 11.

Figures 2-4 exemplify, by no means exhaustively, possible uses of the tie of the invention. In Figure 2 a cane 17 is engaged between the pad portions 11 and 12 of the same tie. The studs 14 on pad 11 each engage the corresponding opening 15 in the pad 12. The central, strap-like regions of the pads bend around the cane and will grip it sufficiently tightly to resist sliding along the cane. This is in contrast to string which, however tightly knotted, will tend to run down a vertical cane under the weight of a plant being supported. The strip portion 13 of the tie is free to surround a plant (not shown) being supported by cane 17.

In Figure 3 two ties 10 and 10A are joined end-to-end by engaging the studs 14 on pad 11 of one tie with the openings 15 of pad 12 of the other tie. A cane 17 may be gripped between the engaged pads of the two ties.

In Figure 4 the two ties 10 and 10A overlies one-another and canes 17 and 17A are gripped between the overlapping pads of the ties. In this case, because the ties 10 and 10A are inverted relative to one-another the studs 14A on the strip portion 13 of one tie may engage the openings 15A of the strip portion 13 of the other tie, giving a relatively rigid construction.

Of course the ties may be used to grip elongated elements other than canes, such as portions of a trellis. The ties may also be used to connect to canes, trellises, plant stems or tree branches decorative features other than plants, such as fairy lights.

CLAIMS:

1. A tie of flat, flexible material comprising two pad portions of similar configuration joined by a relatively narrow strip portion, wherein the pad portions have respectively interengageable male and female formations which have a similar distribution on the pads such that the pads may be joined together by bending the strip portion or alternatively the male or the female formations may be engaged by the female or the male formations of another, similar tie so that the two ties are joined end-to-end.
2. A tie as claimed in claim 1, wherein the strip portion additionally has male and female formations distributed along its length.
3. A tie as claimed in claim 2, wherein male formations extend along one half of the length of the strip portion and a corresponding number of correspondingly positioned female formations extend along the other half of the length of the strip portion such that when bent in the middle the two halves of the length of the strip portion may be secured together.
4. A tie as claimed in any one of the preceding claims, wherein the male formations are studs upstanding from one surface of the respective pad and the female formations are openings in the other pad, each stud fitting a corresponding opening as a friction fit.
5. A tie as claimed in claim 4, wherein each opening is surrounded by an annular rebate.
6. A tie as claimed in any one of the preceding claims, wherein the male and female formations are grouped at opposite ends of the respective pad such that when one pad is brought to overlie the other the two pads may be joined at their opposite ends while allowing central areas of the pads to pass on opposite sides of an element between the pads.
7. A tie as claimed in claim 5, wherein several male or female formations are arranged in an arcuate pattern at each end of the respective pad.
8. A tie substantially as hereinbefore described with reference to and as shown in the accompanying Drawings.



Application No: GB 0016698.3
Claims searched: 1-8

Examiner: Philip Silvie
Date of search: 29 September 2000

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK CI (Ed.R): A1E (EAD); E2A (AAN, ACAT, ACMG, AGB, ACMG, AGKFJ, AGRX)
Int CI (Ed.7): A01G 9/12; A44B (11/20, 11/25); F16B (2/08, 2/26)
Other: Online: EPODOC, WPI, PAJ

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2 209 111 A (WEISS) see fig. 1	1 at least
X	GB 1 376 572 A (KOHSHOH) see fig. 10	1 at least
X	GB 1 196 366 A (ROSS COURTNEY) see figs. 1,2	1 at least
X	GB 1 076 254 A (ROBINSON) see figs. 2-4	1 at least
X	GB 0 929 703 A (ILLINOIS) see figs. 1,2	1 at least
X	EP 0 021 960 A2 (TECNIFLORE) see fig. 1	1 at least

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.